

## New species and records of African Julodinae and Acmaeoderinae (Coleoptera: Buprestidae)

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One new species of *Neojulodis*, *N. (Protojulodis) bouyeri*, and three new *Acmaeodera* species, *A. (Acmaeodera) liessnerae*, *A. (A.) mwengwensis* and *A. (Paracmaeodera) elbiae*, as well as two new *Acmaeodera* subspecies, *A. (A.) decemguttata namibensis* and *A. (Rugacmaeodera) butensis desaegeri* are described and illustrated. New localities for various African Julodinae and Acmaeoderinae are listed.

Material submitted to me for identification since my latest paper on African Julodinae and Acmaeoderinae (Holm 1985) has included some very interesting new species of these groups, which are described here. The several hundred specimens of known species which I had the opportunity to identify also produced some significant extensions of known distribution ranges, which are recorded.

Descriptions are composed to conform with my revisions of the two groups (Holm 1978; 1979) for easy comparison. Localities are provided with a quarter-degree reference even if this was not recorded on the label, but are otherwise reproduced as on the label. Abbreviations of institutes have been modified to four capital letters, a convention that is becoming widely accepted as an aid to electronic data-storage and retrieval.

\*BMNH – British Museum of Natural History, London, United Kingdom.

\*NCIP – National Collection of Insects, Pretoria, Republic of South Africa.

\*PARI – Museum National d'Histoire Naturelle, Paris, France.

\*TERV – Musée Royal de l'Afrique Centrale, Tervuren, Belgium.

\*TMUP – Transvaal Museum (incl. University of Pretoria Collection), Pretoria, Republic of South Africa.

\*WIND – State Museum, Windhoek, Namibia/South West Africa.

### JULODINAE

***Neojulodis (Protojulodis) bouyeri* sp. nov.** (Figs 15–18)

Length 14,1–26,2 mm; width 6,2–10,7 mm.

*Head* about half as wide as pronotum, not completely hidden by pronotum from above. Eyes small, about half as long as space between them. Supra-antennal ridges small, oblique, extending anteriorly to half distance between antennal fossa and epistomal margin. Supra-epistomal ridge absent. Epistome moderately, roundly incised

medially, supra-epistomal area weakly depressed. Frontal sculpture vertical grooves on upper half, these grooves ending on an inverted "V" standing on the antennal sockets. Below this "V"-line sculpture punctate. Setae moderately dense, thin, light yellow, following direction of sculpture. Pronotum narrower than elytra, globose, widest near base. Sculpture densely set, fine punctures but on disc with an irregular maze of shiny unsculpted patches, sometimes forming a median longitudinal ridge. Scutellar protrusion set off by a transverse depression, medially shiny and moderately carinate. Pubescence as on head, recumbent, but becoming very sparse on disc. Anterior margin nearly straight, without a clear ridge. Lateral margin marked by an elongate and unsculpted shiny elevation in posterior two thirds of length. Elytra with sculpture of fine punctures in interstices, slightly rounded, shiny and irregular costae more sparsely punctured. All interstices with about six large tomentose setal patches over very fine and dense punctures, these patches white. Setal patches occupy whole width of interstice, sometimes becoming confluent to form longitudinal bands. Remainder of elytra with fine, white, sparse recumbent setae. Sides parallel from humeri to two thirds of length, from there rounded to a rather short apex. Trispinose apical denticulation very weak, in some specimens irregular or obsolete. Humeral calli flat, inconspicuous. Scutellar area closed with sutural costae slightly bulging. Lateral margin with a complete ridge which describes an "S"-shaped curve between level of metacoxa and base, this basal part of ridge becoming progressively more carinate and wider towards base. Metacoxal tooth on margin miniscule to obsolete. Dorsal side varying from metallic bronze over green to purple, elytra either concolorous with pronotum or tending to the purple end of scale. Underside with colour as pronotum. Punctures fine and rather evenly spread, but sparser at the middle and significantly denser near sides of abdominal sternites and on thorax. Pubescence recumbent, white, markedly longer than on pronotum, rather dense on sides. Prosternum with a thin rim on anterior margin; prosternal process bulging, shiny, rounded, with a groove on either side; length antieriad of procoxa one third of prosternal length. Meso-metasternal suture divided by sternal cavity, elevated but not as prominently as in *N. (P.) bequaerti* Kerremans. Transverse metasternal sulci obsolete near middle; median metasternal sulcus depressed at mid length, semi-obsolete in anterior and posterior quarter of length. Metacoxa more densely punctured distally but with a shiny unsculpted antero-distal corner; with rear margin slightly concave, nearly straight, slightly upturned. Abdominal sternite slightly convex; sulcus between first and second sternite well marked, last with apical margin slightly upturned and evenly rounded in female but slightly bilobate to straight in male. *Appendages*: Antenna 1,5 × as long as width of head, last segment similar to penultimate but slightly longer. Protarsus as long as protibia; all legs concolorous with underside but tarsi slightly darker above. Setation on femora as on underside, on tibiae more erect and with perceptibly denser and shorter brushes on inside of protibia and outside of metatibia. Hindwing with distal cell open (Fig. 17), aedeagus and ovipositor as in Figs 15 and 16 respectively.

This remarkable new species resembles *N. (P.) bequaerti* in size and colouration, but can readily be distinguished by the leg colour which is brown in *bequaerti*, and by the tomentose areas on elytra which are much larger in *bouyeri*. Differences in genitalia between these two species are illustrated in Figs 15–20. It also shows some similarities to *N. (P.) myrmido* Fairmaire, but differs notably in size and again in colour of the legs. With *N. (P.) bequaerti* and *N. (P.) clermonti* it forms a small group of large bodied and apparently distributionally restricted tropical *Neojulodis* species with affinities to *Sternocera*. In my key (Holm 1979) the species keys out to *N. (P.) vittipennis* sebas-

*tiani*, from which it can easily be distinguished by size alone, but also by gross differences in pronotal and elytral sculpture.

I have pleasure in dedicating this remarkable species to the collector, Mr Th Bouyer, who managed to obtain the impressive type series of 69 specimens.

MATERIAL EXAMINED. Holotype: ZAIRE Shaba/Luena xii.1984/Th. Bouyer (TERV). 68 Paratypes: ditto (ex TERV, disseminated to various collections).

### ACMAEODERINAE: ACMAEODERINI

*Acmaeodera (Acmaeodera) ngamensis ngamensis* Obenberger

NEW RECORD. SOUTH AFRICA: TRANSVAAL: Mogol Nature Reserve, SE 25 27 Dd, 19-23.xi.1979, S. J. v. Tonder, C. Kok, G. L. Prinsloo, M. W. Mansell (NCIP).

This is only the second specimen collected and the first in Transvaal.

*Acmaeodera (A.) louwi* Holm

NEW RECORD. NAMIBIA/S.W.A.: Engo riv., Kaokoveld, SE 17 12 Cb, 9.iv.1984, Endrödy-Younga (TMUP).

This record represents a considerable northward extension of the known distribution.

*Acmaeodera (A.) gentilis* Péringuey

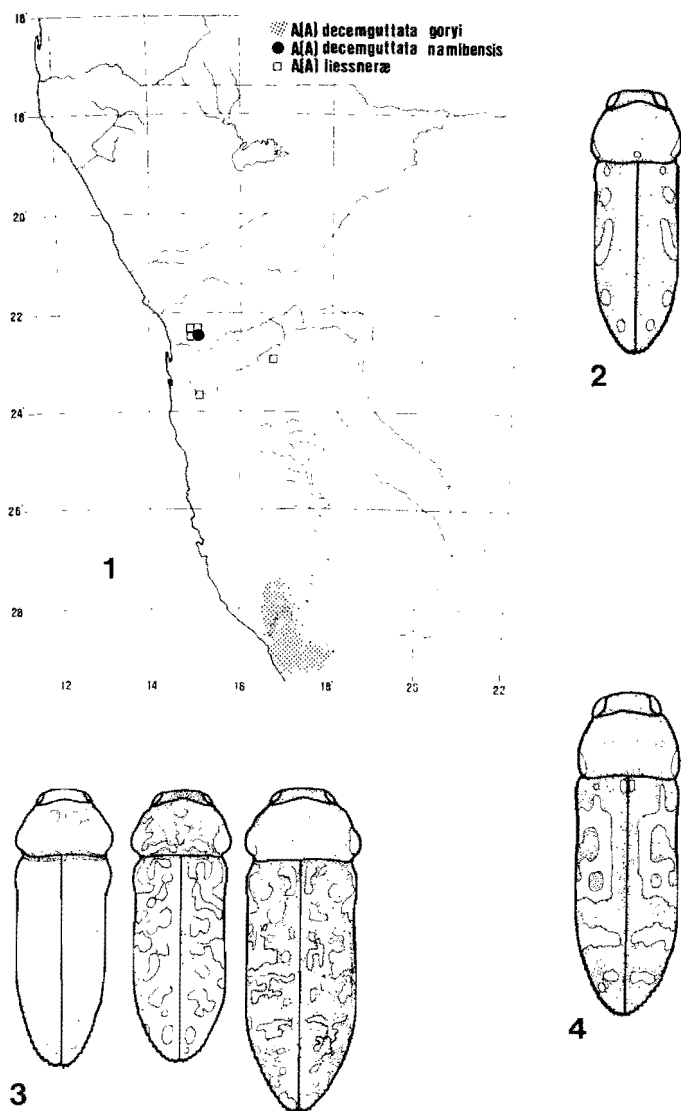
NEW RECORDS. CAPE: Wildepaardehoek Pass, SE 29 17 Dc, 18.ix.1984, 380 m, C. L. Bellamy & W. Wittmer (TMUP); Victoria West, SE 31 23 Ac 17.viii.1983, (on flowers), M-L. Penrith (TMUP); Calvinia, SE 31 19 Bd, ix.1931, Miss Mackie (PARI).

The single specimen from Calvinia represents a remarkable new colour variety (Fig. 4). This specimen comes from the periphery of the distribution range, and also differs from the typical form in having a more finely and sparsely punctured pronotal disc and longer elytra. Further material from this locality might indicate a distinct subspecies.

*Acmaeodera (Acmaeodera) decemguttata namibensis* subsp. nov. (Figs 1, 2)

The single female specimen was collected more than six degrees north of the previously known northern limit of the species. The colour pattern is closest to the subspecies *goryi* Saunders which occurs in the Richtersveld, but *namibensis* differs in having apical maculae on elytra as well as median macula on the rear margin of the pronotal disc (Fig. 2). Strial punctures are much smaller than in any of the other subspecies, the first three interstices flat and about five times wider than striae. The pronotum is exceptionally wide, and prebasally less depressed, with the setation on the disc longer and flatter on the surface than in any other form of the species. Otherwise the specimen conforms to the specific characteristics of *A. decemguttata*.

The name is given after the region from which this extraordinary distribution was recorded (Fig. 1). In the same locality a number of *Nothomorpha* specimens were also collected. As both *A. decemguttata* and *Nothomorpha* spp. are typical inhabitants of



Figs 1-4. 1. Distribution of *Acmaeodera* (*A.*) *liessnerae* sp. nov.; *A. (A.) decemguttata goryi* Saunders and *A. (A.) decemguttata namibensis* subsp. nov. 2. Colour zoning on *A. (A.) decemguttata namibensis* subsp. nov. 3. New colour pattern of *A. (A.) gentilis* Péringuey. 4. New colour patterns of *A. (A.) swammerdami diana* Holm.

the West and North West Cape, and the new localities are separated from this area by over 300 km of Namib dunes, the new records pose an interesting zoogeographical question. It is reasonable to deduce that a Namaqualand-type of vegetation existed continuously from the present Richtersveld to at least the Swakop River, in the not too distant past.

**MATERIAL EXAMINED.** Holotype: NAMIBIA/S.W.A.: Rössing Mine, 22° 28' S; 15° 02' E. Swakopmund distr. 13 March-10 April 1984. J. Irish; H. Liessner (WIND).

*Acmaeodera (A.) swammerdami diana* Holm

**NEW RECORD.** NAMIBIA/S.W.A.: Upper Ostrich Gorge, SE 22 14 Cd, 13.iii.-10.iv.1984. J. Irish & H. Liessner (WIND).

The long series from Namibia represents a considerable western extension of the species, and agrees with the subspecies *diana* Holm. The latter was described from a single specimen, and it is now possible to describe the range of colour variation, which makes a re-definition of the subspecies necessary. Of the diagnostic features mentioned in Holm 1978, the following remain valid:

Umbilici on pronotum and underside larger than in nominal form.

Median pronotal macula well developed.

Elytral maculae more clearly zoned instead of mottled. A black underside is not characteristic. Instead, colour varies as follows:

Underside from very light yellow on abdomen and thorax, over partly yellow on abdomen only, to completely black. Dorsal side variable as in Fig. 3.

Additional characteristics of the subspecies *diana* are as follows:

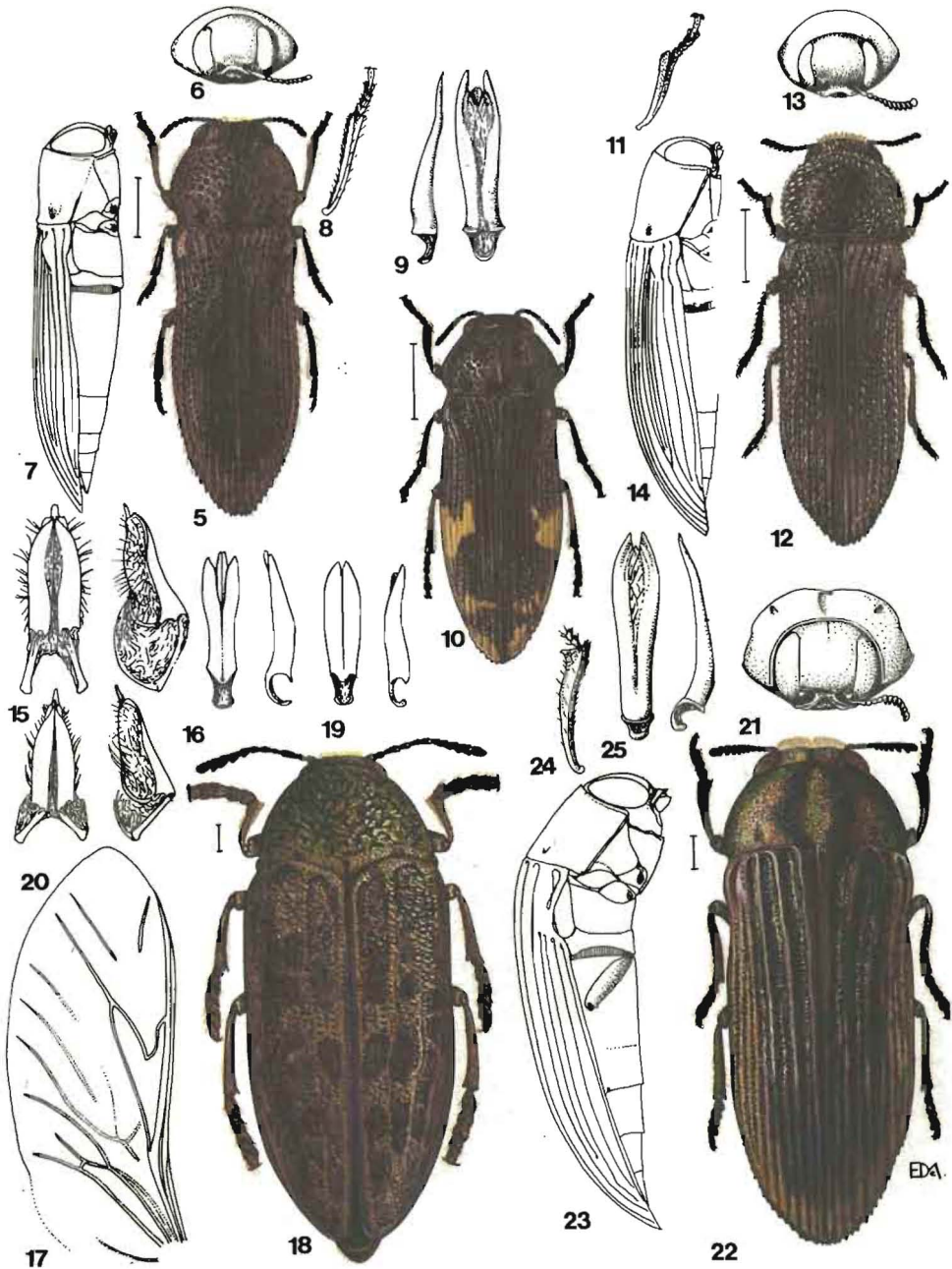
Elytral interstices flat, less sculptured than in nominate form.

Setation significantly shorter than in nominate form.

***Acmaeodera (A.) liessnerae* sp. nov. (Figs 1; 5-9)**

Length 5.6-7.8 mm; width 2.0-2.5 mm.

**Head** (Fig. 6) flat, with frons as wide as long, slightly attenuated to front, sculpture of large shallow umbilici of which about ten fit across middle between eyes. Setae very long, white, curled inward on sides, outward along middle and downward above epistome. Eyes slightly protruding. Epistome short, lower rim broadly and roundly concave, basal width slightly more than one third of width between eyes. Supra-antennal tubercles obsolete. **Pronotum** evenly rounded on sides, slightly broader posteriorly. Median basal fossa on disc small, lateral fossae larger, all three surrounded by large depressions resulting in a generally depressed pronotal base. Lateral rim carinate in basal third only, not projecting, straight. Anterior margin slightly bisinuate, with a well developed submarginal groove on sides but vague on disc. Base straight. Sculpture of large shallow umbilici, sparse along middle where about ten fit into pronotal length, densely placed and smaller on sides. Setae as on head but even longer, irregularly curved inward on sides and rather erect on disc. **Elytra** with sides virtually straight behind humeri, rounded inward in last third of length to form a bluntly rounded apex. Apex with moderately fine serrations. Base very slightly bisinuate, with rim slightly raised mainly near middle. Humeral calli prominent, shiny, not reaching the base. Striae of round punctures, very large and semi-confluent behind humeri, towards middle and apex progressively smaller with first stria ultimately becoming a continuous



narrow groove in apical two thirds, others similarly formed near apex but of diminishing length towards sides. Interstices shiny, with setiferous punctures hardly discernible; ninth strongly raised in posterior half. Setae extremely long on disc, about one third elytral width, erect, white, becoming progressively shorter, more squamose and recumbent towards sides and apex. *Underside* black with a slight bronze sheen. Umbilicate all over, umbilici becoming sparser and smaller towards mid line, larger on pro-episternum, progressively more elongated from second to last abdominal sternite. Setae as on sides of elytra, white, rather dense and broadened, recumbent. Anterior prosternal margin straight, continuous with pronotal margin, with a short rim. Metacoxa with straight rear margin, with distal corner rounded. *Appendages* with colour and setae as on underside. Protibia as in Fig. 8, brushes on inside of protibia and outside of metatibia light, the latter longer and denser. Antennae as in Fig. 6, aedeagus as in Fig. 9.

This remarkable species is an obvious relict of the '*Acmaeoderella*' – like *Acmaeodera* spp. in southern Africa, and closest to *A. (A.) swammerdami* from which it can easily be distinguished by its (quite constant) colour and the long dorsal setae. It can be distinguished from all other southern African *Acmaeodera* species by its pronotal sculpture. In the Kuiseb river bed it was collected off *Acacia erioloba*. The name is dedicated to Hella Liessner, one of the collectors of the majority of the type series.

**MATERIAL EXAMINED.** NAMIBIA/S.W.A.; Holotype : Wasservallei 382, Windhoek SE 22 16 Dc, 21–23.xii.1973/H 16367 (WIND). 1 Paratype: ditto, /H 16361 (TMUP); 2 Paratypes: 6 km n. Arandis, 22° 22' S; 14° 59' E, Damaraland, 10 April–8 May 1984, J. Irish, H. Liessner/H 59187 (WIND); 1 Paratype: Namib/Naukluft Park, Kuiseb r. nr. Gobabeb, 23.34 S, 15.03 E, 18.ii.–20.iii.1983, Nat. Coll. Kuiseb Survey/collected from *Acacia erioloba* (Mimosaceae), (NCIP); 1 Paratype: Upper Panner Gorge, 22° 29' S; 15° 01' E. Swakopmund dist., 8 May–5 June 1984, J. Irish & H. Liessner/H 59555 (WIND); 3 Paratypes: Upper Ostrich Gorge, 22° 29' S; 14° 59' E, Swakopmund dist., 10 April–8 May 1984, J. Irish & Liessner/H 59003 (WIND\*); 5 Paratypes: Lower Ostrich Gorge, 22° 30' S; 14° 58' E, Swakopmund dist., 10 April–8 May 1984, J. Irish & H. Liessner/H 59067 (WIND\*).

***Acmaeodera (A.) mwengwensis* sp. nov. (Figs 11–14)**

Length 6.3 mm; width 2.1 mm.

*Head* (Fig. 13) rounded, with frons slightly broader than long, sides rounded outward and subparallel. Sculpture of large umbilici of which about ten fit across

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\*Specimens of these series disseminated to various collections.

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Figs 5–26. New species and subspecies of *Neojulodis* and *Acmaeodera*. (Scale bars indicate 1 mm for dorsal, frontal and lateral aspects. Other details are drawn to twice the scale.) 5–9. *A. (A.) liessnerae* sp. nov.: 5. dorsal aspect; 6. frontal aspect; 7. lateral aspect; 8. protibia and tarsus; 9. aedeagus, left lateral, right dorsal aspect. 10. *A. (R.) butensis desaegeri* subsp. nov.: dorsal aspect. 11–14. *A. (A.) mwengwensis* sp. nov.: 11. protibia and tarsus; 12. dorsal aspect; 13. frontal aspect; 14. lateral aspect. 15–18. *Neojulodis (Protojulodis) bouyeri* sp. nov.: 15. ovipositor, left dorsal, right lateral; 16. aedeagus, left dorsal, right lateral; 17. hindwing venation; 18. dorsal aspect. 19–20. *N. (P.) bequaerti* Kerremans.: 19. aedeagus, left dorsal, right lateral; 20. ovipositor, left dorsal, right lateral. 21–25. *A. (Paracmaeodera) elbiae* sp. nov.: 21. frontal aspect; 22. dorsal aspect; 23. lateral aspect; 24. protibia; 25. aedeagus, left dorsal, right lateral.

middle of frons between eyes. Setae white interspersed with brown, moderately squamose, curved downward. Eyes not protruding. Epistome moderately long, roundly incised below, base more than one third of width of frons, meeting frons at marked angle but without a groove. Supra-antennal tubercles small, transverse. *Pronotum* evenly rounded on sides, widest just behind middle. Basal fossae on disc deep, surrounded by slight depressions, median fossa and depression both smaller. Lateral rim carinate and serrate along entire length, visible in posterior half from above, straight from side. Base straight. Anterior margin slightly produced in middle in two straight lines, without groove. Sculpture of large shallow umbilici which become smaller and denser on disc where about sixteen fit into length. Setae as on head, inclined upward on sides and forward on disc, with brown setae occurring on disc only. *Elytra* with sides hardly dilated at humeri, parallel from behind humeri and attenuating in the posterior third to a roundly acuminate and finely denticulate apex. Base straight, with a raised rim between humeri. Humeral calli small, sculptured, not reaching base. Striae of rounded punctures, about half diameter of interstices behind humeri, becoming smaller towards middle and apex, in apical third sunk into shallow grooves. Interstices heavily sculptured at base, moderately sculptured and with single rows of large shallow punctures towards apex, lateral three costate and serrate. Setae as on pronotum but shorter, recumbent, with dark setae on dorsal plane only. *Underside*: (The single specimen is glued to a card, and the glue has cracked in such a way that the legs, which are embedded in glue, are fragmented. It would be unwise to dislodge the specimen, and only such ventral features as could be discerned *in situ* are therefore described.) Venter black with moderately large umbilici all over. Setae short, white, recumbent, squamose. Prosternum slightly trisinuate, with anterior margin slightly behind pronotal margin and with a groove and narrow collar. Metacoxa with angular distal corner. *Appendages* with colour and setae as on underside, dark brush on inside of protibia very short, reduced, near apex only (Fig. 11). Brush on outside of metatibia brown, sparse. Antenna (Fig. 13) with last seven segments dilated. (Holotype unsexed.) This species is a typical member of the '*Acmaeoderella*' species group which predominates in the Mediterranean and Near East regions. In the subsaharan fauna it is closest to *A. (A.) liessneri*, from which it may be distinguished by head shape, setation, metacoxal shape and colouration. The '*Acmaeoderella*'-species group has several probably plesiomorphic features which place it between *Acmaeodera s. str.* and *A. (Rugacmaeodera)*. *A. mwengwensis* shows the angular metacoxa and sharp lateral pronotal margin typical of *Rugacmaeodera*, while squamose setae and umbilicate sculpture are also more common in the latter genus. It lacks the epistomal groove, however, which places it within *Acmaeodera s. str.* The species is named after the typical locality.

MATERIAL EXAMINED. Zambia: Holotype : NW Rhodesia, Mwengwa, SE 13 27 Ba, 2.x.1914, H. C. Dollman (BMNH).

***Acmaeodera (R.) butensis desaegeri* subsp. nov. (Fig. 10)**

This new subspecies differs from the nominal form in colour zoning (Fig. 10); a more slender outline and longer elytral apex; less sharply grooved apical interstices on elytra; flat but not depressed frons; and less iridescent background colour with lighter maculae. It agrees with the nominal form in all other respects, notably the distinctive shape of the metacoxa; sculpture and setation; and shape of the protibia. The distribution is to the south of the nominal form.

The material which was kindly made available to me by Dr Decelle from Tervuren, is the only known material of the species except the Holotype of the nominal form.

This rare subspecies is named after the first collector, H. de Saeger.

**MATERIAL EXAMINED.** ZAIRE: Holotype : Congo Belge, P. N. G. Pidigala, NE 04 29 Cd, 23.iv.1952, H. de Saeger/3328 (TERV); 2 Paratypes: ditto (TMUP ex TERV); 1 Paratype: Congo Belge, P. N. A., SE 01 20 Aa, 7.xi.1956, P. Vanschuytbroeck/VS 792 (TERV).

*Acmaeodera (Paracmaeodera) glabra* Obenberger

**NEW RECORD.** CAPE: 18 km SSW Springbok, SE 29 17 Dc, 320 m, 17–18.ix.1984, C. L. Bellamy (TMUP).

This is the southernmost record of this rare species, and the first from the Cape Province.

***Acmaeodera (Paracmaeodera) elbiae* sp. nov. (Figs 21–25)**

Length 12.2 mm; width 4.8 mm.

**Head** (Fig. 21) slightly rounded, frons longer than wide with sides subparallel and without a median depression, densely covered with punctures with shiny rounded common rims. About fourteen of these punctures fit across middle of frons. Setae long, white, inclined downward, not very dense. Eyes large and protruding. Epistome thin, deeply incised below in form of an inverted rounded 'V'. Supra-antennal tubercles obsolete. **Pronotum** more than twice as wide as long, slightly wider than elytra at humeri, with anterior margin slightly bisinuate and roundly protracted in middle. Sides rounded, widest one third of length from base, with lateral ridge only slightly upturned, straight from side, just visible from above. Base nearly straight. Disc with a deep, very densely and coarsely punctured median groove bordered by a shiny area with relatively small and sparse punctures. Towards sides these punctures become progressively larger and denser, leaving only a maze of common rims between them. Setae shorter than on head, white, forward inclined, denser and longer in median groove. Median basal fossa indistinct, in base of median groove, divided into two small fossae side by side very near pronotal base. Lateral fossae small but deep and distinct, well removed from pronotal base, surrounded by slightly sloping depressions. **Elytra** dilated just behind humeri, from there sides parallel to two thirds of length from where they curve inward to a very bluntly rounded and finely serrated apex. Humeral callus elongated, shiny, moderately elevated. Sutural and all uneven numbered interstices strongly elevated, shiny and rounded near base, all even numbered interstices obsolete in basal half. In apical half all interstices become roundly costulate. Strial punctures fine, about one quarter diameter of costae at base, becoming progressively smaller and sunk into grooves between interstices towards apex. Scutellar area depressed just behind base, scutellar stria subobsolete. Setae short, white, backward inclined, irregular and sparsely distributed, mainly on apical third of elytra. Base with a shiny and rounded rim connecting the costate uneven numbered interstices. **Underside** metallic green with fine needle punctures along the shiny middle, becoming coarser and denser towards sides and umbilicate on sides of abdominal sternites. Pro-episternum with large umbilici. Mesepimeron well developed. Abdominal sternite with slight lateral depressions. Setae moder-

ately long and dense, recumbent, very thin, white but brown on last two abdominal sternites. Metacoxa with evenly concave rear margin. Anterior prosternal margin well behind that of pronotum, slightly concave in middle and again on either side but without a clear antennal incision, with a groove and rounded rim. *Appendages* with colour as underside and rather short, white setae. Protibia (Fig. 24) with a light hairbrush on inside, a bladelike and uneven outer margin and acute distal outer angle (all tarsi, and all tibiae save one protibia and one mesotibia of type specimen missing). Femora without posterior lobes. Antenna short, fifth to eleventh segments dilated (Fig. 21). Aedeagus as in Fig. 25.

This new species is only known from the male holotype, but is so distinct that it can be described without misgivings. It keys out to *A. (Par.) elevata* Klug in my key (Holm 1978), and can readily be distinguished from that species by dorsal setation alone, also differing strikingly in outline, sculpture and colour. It is closest to *A. (Par.) fascigera* Harold, which it very much resembles in outline and general appearance, and with which it shares the bicoloured setation on underside. It is easily distinguished from *fascigera* in having all even numbered interstices obsolete near elytral base, while in *fascigera* the second is well developed. Furthermore, the epistome of *elbiae* is much more deeply incised, setae on pronotal disc are white, interstices are not grooved but costulate near elytral apex and sculpture is very different. From the only other species with which it might be confused, *A. (Par.) illustris* Théry and *A. (Par.) aequalis* Obst, it can be readily distinguished by its reduced second elytral interstice, while it also differs in outline, sculpture and many other respects. The species is named after Elbie de Meillon in recognition of her exquisite artwork on insects, samples of which illustrate this paper.

**MATERIAL EXAMINED.** Holotype ♂: SOMALIA: Arfa, Mudugh Prov. (NE 07 47 Bc) 500 ft, vi. 1944, T. H. Jackson (TMUP).

#### ACKNOWLEDGEMENTS

The curators of the various collections listed in the introduction are thanked for submitting material to me for study, and so are Prof J. G. Theron, Mr P. Forchhammer and Mr A. J. Duke. For various assistance I wish to thank Mr C. L. Bellamy, Mrs B. Dombrowsky and Mrs M. Walzl, while Mrs E. de Meillon is thanked for the fine colour drawings. Grants of the CSIR and University of Pretoria are acknowledged.

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Accepted 22 March 1986